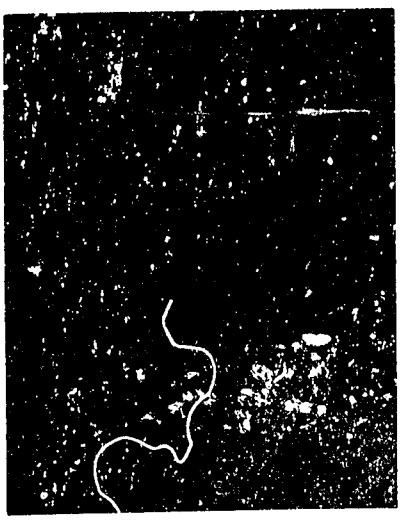
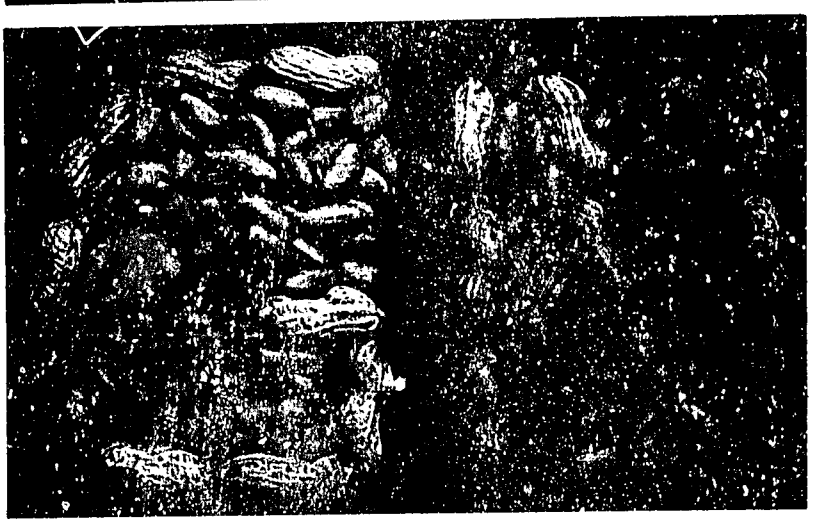
PN-ABR-334

Groundnut Elite Germplasm ICGV 86564



- High-yielding dual-purpose elite breeding line suitable for direct consumption as seed and for oil
- Average 100-seed mass 90 g
- Average oil content 51%
- Average protein content 22%
- Average oleic/linoleic acid ratio 1.9
- Widely adapted and performs well under good management



ICRISAT
Plant Material Description no. 38

International Crops Research Institute for the Semi-Arid Tropics
Patancheru, Andhra Pradesh 502 324, India

1993

Purpose of Description

ICGV 86564 is a high-yielding, dual-purpose elite breeding line suitable for direct consumption as seed and for oil.

Origin and Development

ICGV 86564 was developed following the bulk pedigree method from a cross between Ah 114 and NC Ac 1107, made in 1982 at ICRISAT Center, India. Its pedigree is (Ah 114 × NC Ac 1107) F_2-B_1-B_1-B_1-B_1-B_1-B_1-B_1-B_1.

Performance

In yield trials at ICRISAT Center during the rainy (1988 and 1989) and postrainy (1987/88, 1988/89, and 1989/90) seasons, ICGV 86564 produced, on average, 3 t pods ha^{-1}, 7% more than the control Chandra, a commercially grown confectionery cultivar in India. Compared with Chandra, it also had 10% greater shelling turnover, 20% greater 100-seed mass, 6% more oil content, and 12% greater oleic/linoleic acid ratio (Table 1). ICGV 86564 was superior in pod yield to the local control G 18 in Burundi by 76%, B 4 in Nepal by 25%, Banki in Pakistan by 6%, and MGS 2 in Zambia by 16%. In general, it also showed greater 100-seed mass than the local cultivars in these countries.

Plant Characters

ICGV 86564 belongs to the virginia botanical group and has a decumbent 3 growth habit, alternate flowering, medium-sized dark green elliptic leaves, light purple pigmentation on pegs, and large virginia pods. It has 5-10 primary and 11-22 secondary branches. Its main axis is 20 cm high with a 36-cm broad canopy. It matures in 120-130 days in the rainy (Jun-Oct) and 140-150 days in the postrainy (Nov-Apr) season at ICRISAT Center, India.

Pod/Seed Characters

ICGV 86564 has mainly 2-1 seeded large virginia pods with slight-to-moderate beak and constriction, and moderate reticulation and ridges. It has, on average, a shelling turnover of 69%, and a 100-seed mass of 91 g. Its seeds are tan in color.

Quality Characters

ICGV 86564 has, on average, 51% oil and 22% protein content. Its oleic/linoleic acid ratio averages 1.9, and polyunsaturated/saturated fatty acid ratio averages 1.2 (Table 1).

General Agronomic Recommendations

Since ICGV 86564 is a large-seeded variety, it requires a high level of management. To achieve better results with this variety, depending on the available Ca status in the soil, a high dose of gypsum should be applied to the soil at the peak flowering stage. The crop should be fully protected against diseases and insect pests. It should not suffer moisture stress during the pod-filling stage. In addition to these general recommendations, the cultivation package should include local agronomic practices recommended by the concerned local authorities. The crop should be grown for its full duration to obtain high-grade confectionery seeds.

Table 1. Performance of ICGV 86564 and the control cultivar Chandra, 1987/88 to 1989/90 seasons, ICRISAT Center, Patancheru, India.

Season	Variety	Pod yield (t ha^{-1})	Shelling turnover (%)	100-seed mass (g)	Oil (%)	Protein (%)	Oleic/linoleic acid ratio	P/S[1] ratio	Iodine value
1987/88 (postrainy)	ICGV 86564	3.1	75	102	52	23	1.7	1.3	92
	Chandra	2.7	65	82	49	28	1.6	1.5	95
1988 (rainy)	ICGV 86564	1.7	68	74	51	22	-[2]	-	-
	Chandra	1.5	60	59	47	22	-	-	-
1988/89 (postrainy)	ICGV 86564	3.6	69	115	49	22	1.6	1.5	95
	Chandra	3.5	60	87	47	24	1.3	1.5	94
1989 (rainy)	ICGV 86564	2.6	64	74	51	20	1.9	1.2	90
	Chandra	2.3	63	69	49	20	1.7	1.4	93
1989/90 (postrainy)	ICGV 86564	4.2	67	91	51	25	2.6	0.9	85
	Chandra	4.0	66	85	46	24	1.9	1.5	94
Average	ICGV 86564	3.0	69	91	51	22	1.9	1.2	90
	Chandra	2.8	63	76	48	24	1.7	1.5	94
Average increase (%)		7	10	20	6	-8	12	-20	-4

1. P/S ratio= Polyunsaturated/saturated fatty acid ratio.
2. - = Not tested.

Source: Groundnut Breeding Unit Progress Report-3/1991. Project Progress Report LG-609(90) IC. Breeding groundnut for confectionery requirements.

Plant Material Descriptions from ICRISAT

Leaflets in this series provide brief descriptions of crop genotypes identified or developed by ICRISAT, including:

- germplasm accessions with important agronomic or resistance attributes;
- breeding materials, both segregating and stabilized, with unique character combinations; and
- cultivars that have been released for cultivation.

These descriptions announce the availability of plant material, primarily for the benefit of the Institute's cooperators. Their purpose is to facilitate the identification of cultivars and lines and to promote their wide utilization. Requests should be addressed to the Director General, ICRISAT, or to appropriate seed suppliers. Stocks for research use issued by ICRISAT are sent to cooperators and other users free of charge.

ICRISAT is a nonprofit, scientific, research and training institute receiving support from donors through the Consultative Group on International Agricultural Research. It serves as a world center for the improvement of grain yield and quality of sorghum, pearl millet, finger millet, chickpea, pigeonpea, and groundnut, and acts as a world repository for the genetic resources of these crops. The plant materials announced in these leaflets are end-products of this work, which is aimed at enhancing the agricultural productivity of resource-poor farmers throughout the semi-arid tropics.

ISBN 92-9066-260-3 Order code: PME 038 Printed at ICRISAT Center 93-115